0032

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

OK

July 21, 2004

TO: Internal File

THRU: Gregg Galecki, Senior Reclamation Hydrologist/Team Lead

FROM: Dana Dean, P.E., Senior Reclamation Hydrologist

RE: SITLA Lease, Canyon Fuel Company, Dugout Canyon Mine, C/007/0039, Task #1915

SUMMARY:

Canyon Fuel Company submitted an amendment on January 14, 2004 to add a new lease (SITLA ML-42649) to the Dugout Canyon Mine. The new lease will be accessed underground and no surface disturbance will take place.

After two rounds in which the Permittee provided additional information, the Division found the application administratively complete on May 17, 2004.

This memo addresses the hydrology section of the application.

The application does not meet the minimum requirements of the regulations. The Division should not approve the amendment until the Permittee satisfies each of the deficiencies described below.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

Baseline Information

The Permittee has provided updated baseline water-monitoring information in Appendix 7-7 and on the Division's Electronic Water Monitoring Database. Within the SITLA lease, the Permittee has monitored the following sites for baseline:

SITE	LOCATION	TYPE	MONITORING PERIOD (to date)
RC-1	Rock Canyon	Surface point	3/2000 – 10/2003
PC-1	Pace Creek	Surface point	4/1978 – 10/1979
PC-1A	Pace Creek	Surface point	9/1999 – 10/2003
200	North Horn Fmn.	Spring	3/2000 – 10/2003
203	North Horn Fmn.	Spring	3/2000 – 10/2003
259	North Horn Fmn.	Spring	3/2000 – 10/2003
260	Colton Fmn.	Spring	3/2000 – 10/2003

Ground Water

There are several springs within the SITLA Lease, but most of them lie outside of the potential subsidence zone.

Only one spring that the Permittee monitors (260) lies within the potential subsidence zone of the SITLA Lease. Of the 31 times the Permittee has monitored that spring, the majority (19) had a flow between 10 and 20 gpm. The minimum and maximum flows were .053 gpm and 33 gpm respectively. The average flow was 13.65 gpm with a median of 12 gpm. There are no water rights associated with Spring 260. This spring emanates from the Colton Formation.

Springs SC-93 through SC-96 also lie within the potential subsidence zone. Soldier Creek Coal Company monitored each of these springs in 1995-1998. None ever flowed over 6

gpm during that time. There are no water rights associated with any of these springs, however there is one for the channel near SC-93, 94, and 95. All four of these springs emanate from the North Horn Formation.

There is a cluster of springs in the northwest corner of Section 20 T13S, R13E, SLBM inside of the permit area, but outside of the potential subsidence zone. They are: SC-107 through SC-112, 258, and 259. The Permittee monitors Spring 259 and had previously monitored SC-107 through SC-112 in 1995-1998. None of the SC springs ever flowed more than 9 gpm. The Permittee has recorded 17 flow samples at Spring 259 since 2000. Thirteen of those were 0 gpm. The remaining 4 ranged from 8.21 gpm and 9.69 gpm and were recorded in 2000 and 2001, before the current drought started. It had flows of 0.11 and 0.09 gpm in 1999. There are two water rights associated with this cluster of springs: 91-1735, and 91-1733. Springs 259, SC-107, and SC-108 emanate from the North Horn Formation; while SC-109 and SC-112 emanate from the Flagstaff Formation.

There are some springs, associated with Pace Creek, which also lie inside the permit area, but outside of the potential subsidence zone. They are: SC-97, SC-98, 203, 204, and 205. The Permittee recorded flows of up to 2 gpm at SC-97 and SC-98 in 1995-1998. They monitor Spring 203 and have 31 recorded flow samples since 2000. The average flow has been 4.11 gpm with a minimum of 0.009 gpm and a maximum of 22.6 gpm. Water Right 91-4970 is associated with Spring 203. All of these springs emanate from the North Horn Formation.

Springs 200, 201, 202, and 226 also lie inside the permit area but outside the potential subsidence zone. They are associated with Rock Creek. The Permittee's monitoring in 1998-1999 showed that 201, 202, and 226 had very little flow (<0.5 gpm). The Permittee monitors Spring 200 and has 18 recorded flow samples since 2000. Fourteen of those were 0 gpm. The remaining flows were 2.2 gpm, .005 gpm, and two occurrences of 0.0013 gpm. Water Right 91-1729 is associated with Spring 200. Springs 200, 201, and 226 emanate from the North Horn Formation; while Spring 202 emanates from the Castlegate Sandstone.

The Permittee does not provide a discussion of other subsurface water in the SITLA Lease. However, they have conducted extensive exploration in the area and apparently have not encountered any water while drilling. The Permittee needs to provide a discussion of the subsurface water resources, or lack thereof, in the amendment.

Surface Water

There are two major surface-water drainages within the SITLA Lease. They are Pace Creek and Rock Creek.

Baseline data show that Rock Creek acts ephemerally within the SITLA Lease, flowing only in response to snowmelt and summer storms. Mining should have no effect on Rock Creek, since it lies entirely outside of the anticipated subsidence zone.

Pace Creek flows perennially in parts of the permit area and intermittently in others. Even the perennial portions fluctuate seasonally as evidenced by the data in Appendix 7-7 and the Division's Electronic Water Database. In Section 724.400, the Permittee states: "Flows in spring/early summer are typically several times greater than in late summer/fall. Also, it is interesting to note that in 2002 and 2003 there have been periods when there is no flow at station PC-2 and flows measured in late summer/fall at PC-1A have been significantly less than in previous years. The drop in flow is undoubtedly related to the prolonged drought the area has been suffering through since 1999." The Permittee also indicates that Pace Creek's base flow seems to come from springs in the Castlegate Sandstone, Price River, Flagstaff/North Horn, and Colton Formations, with the majority coming from springs in the North Horn and Flagstaff Formations.

A portion of Pace Creek lies within the subsidence zone and the Permittee will need to provide plans to mitigate any effect subsidence may have on the channel. The Permittee feels that any cracks or other damage will self-repair quickly, however they must provide a plan to mitigate any damage that does not self-repair. A monitoring plan should be included, to ensure that the Permittee notices and can mitigate the effects as soon as possible after they occur. Mitigation should implement the Best Technology Currently Available (BTCA).

Baseline Cumulative Impact Area Information

Sufficient information is available in the application and from Federal and State agencies to complete the CHIA.

The Dugout Mine belongs to the Book Cliffs Area II CHIA. The addition of the SITLA Lease will not change the CHIA boundaries since it was included in the previous CHIA.

Probable Hydrologic Consequences Determination

The Permittee provides a Probable Hydrologic Consequences determination (PHC) in Section 728.300 of the MRP. There are few changes to the PHC in this amendment. One significant change is that Pace Creek could be subsided where longwall mining will occur beneath it. As discussed above, the Permittee needs to discuss mitigation plans for Pace Creek in the event that subsidence causes damage to the channel.

Findings:

The information found in the PAP is inadequate. Before approval, the Permittee must provide the following in accordance with:

R645-301-724.100, The Permittee must include a discussion of the non-spring related subsurface water resources, or lack thereof in the SITLA Lease.

R645-301-525.510, and R645-301-731, The Permittee must include plans for mitigation of any damage that may occur to Pace Creek from subsidence.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Monitoring and Sampling Location Maps

Plate 7-3 depicts the water monitoring locations for the entire mine, including the SITLA Lease. However, the Permittee has not defined some line types used on the map in the legend. The Permittee needs to define all line-types used in Plate 7-3 in the legend.

Subsurface Water Resource Maps

The Permittee depicts the potentiometric surface of the Castlegate Sandstone on Plate 7-3. However, the map could be deceiving since the information is for 1982 and is based on just three wells. The Division feels that it would be better to remove the map from the MRP since it just causes confusion.

The Permittee shows all water rights, including those associated with springs, on Plate 7-2.

Surface Water Resource Maps

The Permittee does not present any maps clearly depicting surface water resources in the SITLA lease. It is difficult to distinguish between roads and streams/channels on Plate 7-1, since line types for neither are included in the legend. The Permittee should clearly depict all surface water resources in the area on Plate 7-1.

Findings:

The information found in the PAP is inadequate. Before approval, the Permittee must provide the following in accordance with:

R645-301-121.200, 1)The Permittee must identify each major line-type used on maps in the legend, 2) Plate 7-3 is confusing and based on sparse and old information. To avoid confusion, the Permittee should remove the map from the MRP, and instead provide a discussion in Section 724.100 of the subsurface water resources or lack thereof.

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Groundwater Monitoring

The Permittee does not propose any changes to the groundwater-monitoring plan in this amendment. They will continue to monitor springs within the SITLA Lease according to Table 7-4 of the MRP. The sites they will continue to monitor in the SITLA Lease are: 200, 203, 259, and 260.

Surface Water Monitoring

The Permittee does not propose any changes to the surface water-monitoring plan in this amendment. They will continue to monitor streams within the SITLA Lease according to Table 7-5 of the MRP. The sites they will continue to monitor in the SITLA Lease are: PC-1A, and RC-1.

Acid- and Toxic-Forming Materials and Underground Development Waste

The Permittee provides acid and toxic analyses of samples taken above and below the Rock Canyon and Gilson Coal Seams in Appendix 6-2 (confidential files). The analyses indicate that

there are no acid- or toxic-forming materials present. The Permittee states in Section 731.300 that they will periodically monitor for acid- and toxic-forming materials and dispose of them properly if found.

Stream Buffer Zones

Since the Division is granting permission to the Permittee to mine under Pace Creek as outlined in the amendment, stream buffer zone markers are not required in that area.

Findings:

Information provided in the amendment meets the minimum requirements of the Hydrologic Operation Information section of the regulations.

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

Analysis:

The Division will complete the CHIA once the Permittee has submitted all required information for the PHC.

Findings:

The Division has not completed the CHIA.

RECOMMENDATIONS:

The application does not meet the minimum requirements of the regulations. The Division should not approve the permit until the Permittee satisfies each of the deficiencies described above.

O:\007039.DUG\FINAL\dd1915.doc